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ALS Environmental  
ALS Group USA, Corp  
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[www.alsglobal.com](http://www.alsglobal.com)

June 01, 2017

**Analytical Report for Service Request No: K1704309**

Lynda Lombardi  
AMEC Foster Wheeler Environment & Infrastructure Inc.  
10940 White Rock Road  
Suite 190  
Rancho Cordova, CA 95670

**RE: Leviathan Mine RI/FS / 0013091150**

Dear Lynda,

Enclosed are the results of the sample(s) submitted to our laboratory May 02, 2017  
For your reference, these analyses have been assigned our service request number **K1704309**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at [Kelley.Lovejoy@alsglobal.com](mailto:Kelley.Lovejoy@alsglobal.com).

Respectfully submitted,

ALS Group USA, Corp dba ALS Environmental

A handwritten signature in black ink that reads "Kelley Lovejoy".

Kelley Lovejoy  
Project Manager



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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### Inorganic Data Qualifiers

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
  - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### Organic Data Qualifiers

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso**  
**State Certifications, Accreditations, and Licenses**

Agency	Web Site	Number
Alaska DEH	<a href="http://dec.alaska.gov/eh/lab/cs/csapproval.htm">http://dec.alaska.gov/eh/lab/cs/csapproval.htm</a>	UST-040
Arizona DHS	<a href="http://www.azdhs.gov/lab/license/env.htm">http://www.azdhs.gov/lab/license/env.htm</a>	AZ0339
Arkansas - DEQ	<a href="http://www.adeq.state.ar.us/techsvs/labcert.htm">http://www.adeq.state.ar.us/techsvs/labcert.htm</a>	88-0637
California DHS (ELAP)	<a href="http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx">http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx</a>	2795
DOD ELAP	<a href="http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm">http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm</a>	L14-51
Florida DOH	<a href="http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm">http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm</a>	E87412
Hawaii DOH	<a href="http://health.hawaii.gov/">http://health.hawaii.gov/</a>	-
ISO 17025	<a href="http://www.pjlabs.com/">http://www.pjlabs.com/</a>	L16-57
Louisiana DEQ	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	03016
Maine DHS	<a href="http://www.maine.gov/dhhs/">http://www.maine.gov/dhhs/</a>	WA01276
Minnesota DOH	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	053-999-457
Nevada DEP	<a href="http://ndep.nv.gov/bsdw/labservice.htm">http://ndep.nv.gov/bsdw/labservice.htm</a>	WA01276
New Jersey DEP	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	WA005
New York - DOH	<a href="https://www.wadsworth.org/regulatory/elap">https://www.wadsworth.org/regulatory/elap</a>	12060
North Carolina DEQ	<a href="https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification">https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification</a>	605
Oklahoma DEQ	<a href="http://www.deq.state.ok.us/CSDnew/labcert.htm">http://www.deq.state.ok.us/CSDnew/labcert.htm</a>	9801
Oregon – DEQ (NELAP)	<a href="http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	WA100010
South Carolina DHEC	<a href="http://www.scdhec.gov/environment/EnvironmentalLabCertification/">http://www.scdhec.gov/environment/EnvironmentalLabCertification/</a>	61002
Texas CEQ	<a href="http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html</a>	T104704427
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C544
Wyoming (EPA Region 8)	<a href="https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water">https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water</a>	-
Kelso Laboratory Website	<a href="http://www.alsglobal.com">www.alsglobal.com</a>	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at [www.alsglobal.com](http://www.alsglobal.com) or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



## Case Narrative

**ALS Environmental—Kelso Laboratory**  
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## ALS ENVIRONMENTAL

**Client:** AMEC Foster Wheeler E & I (Geomatrix)      **Service Request No.:** K1704309  
**Project:** Leviathan Mine RI/FS/0013091150      **Date Received:** 05/02/17  
**Sample Matrix:** Water

### Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

#### **Sample Receipt**

Five water samples were received for analysis at ALS Environmental on 05/02/17. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

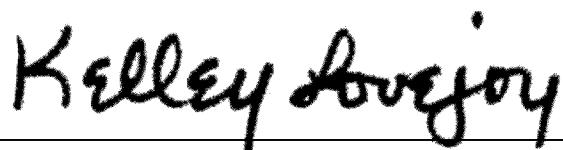
#### **General Chemistry Parameters**

No anomalies associated with the analysis of these samples were observed.

#### **Total and Dissolved Metals**

No anomalies associated with the analysis of these samples were observed.

Approved by \_\_\_\_\_





## Chain of Custody

**ALS Environmental—Kelso Laboratory**  
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## Laboratory Management Program LaMP Chain of Custody Record

K1A04309  
Page 1 of 1

BP/ARC Project Name: Leviathan Mine RI/FS

Req Due Date (mm/dd/yy): \_\_\_\_\_

Rush TAT: Yes  No

BP/ARC Facility No: \_\_\_\_\_

Lab Work Order Number: \_\_\_\_\_

Lab Name: ALS Environmental				BP/ARC Facility Address: Leviathan Mine								Consultant/Contractor: Amec Foster Wheeler								
Lab Address: 1317 South 13th Avenue, Kelso, WA 98626				City, State, ZIP Code: Alpine County, California								Consultant/Contractor Project No: 0013091150 OnProp								
Lab PM: Kelley Lovejoy				Lead Regulatory Agency: U.S. EPA Region IX								Address: 10940 White Rock Rd, Ste 190, Rancho Cordova, CA 95670								
Lab Phone: 360-577-7222				California Global ID No.: NA								Consultant/Contractor PM: Marc Lombardi								
Lab Shipping Acnt: 1102-6855-6 (ALS Acct #)				Enfos Proposal No: D013P-0019 Work Release No: WR312386								Phone: 916-636-3200								
Lab Bottle Order No: NA				Accounting Mode: Provision <input checked="" type="checkbox"/> OOC-BU <input type="checkbox"/> OOC-RM <input type="checkbox"/>								Email Report/EDD To: Maria Barajas (maria.barajas@amecfw.com)								
Other Info: Storm Water & Snowmelt Monitoring				Stage: 4_Execute Activity: Spend								Invoice To: BP/ARC <input checked="" type="checkbox"/> Contractor <input type="checkbox"/>								
BP/ARC EBM: Anthony Brown				Matrix				No. Containers / Preservative				Requested Analyses				Report Type & QC Level				
EBM Phone: 714-228-6770																				
EBM Email: anthony.brown@bp.com																Standard <input checked="" type="checkbox"/>				
Lab No.	Sample Description			Date	Time	Soil / Solid	Water / Liquid	Air / Vapor	Total Number of Containers	Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	Methanol	Diss Metals (EPA 200.7/ EPA 200.8/EPA 245.1) Total Metals (EPA 200.7/ EPA 200.8/EPA 245.1)	TSS (SM 2540D)	TDS (SM 2540C)	MS/MSD/LD	Comments	
																		Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.		
	STWA05011701	05/1/17	0800	X	3	1	2												Dissolved metals samples are filtered	
	STWA05011702	05/1/17	0802	X	3	1	2												in the field.	
	STWA05011703	05/1/17	0804	X	3	1	2												Metals are: Al, Sb, As, Ba, Be, Cd, Cr,	
	STWL05011701	05/1/17	0800	X	3	1	2												Co, Cu, Pb, Ni, Se, Ag, Ti, V, Zn (200.8);	
	STWL05011702	05/1/17	1330	X	2	2													Fe, Mn (200.7); Hg (245.1).	
						B.J.	05/1/17													

Sampler's Name: Bryce Johnson

Relinquished By / Affiliation

Date

Time

Accepted By / Affiliation

Date

Time

Sampler's Company: Amec Foster Wheeler

Bryce Johnson / AFW

05/1/17 0830

Joe Madero USE

5/1

1631

Shipment Method: Fed Ex

Ship Date: 05/01/17

Joe Madero USE

5/1 1800

Craig Caines ALS

5/2

1030

Shipment Tracking No: 8112 8891 0980

Special Instructions:

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No

Temp Blank: Yes / No

Cooler Temp on Receipt: \_\_\_\_\_ °F/C

Trip Blank: Yes / No

MS/MSD Sample Submitted: Yes / No

## Cooler Receipt and Preservation Form

sent Amer Foster Wheeler Service Request K17 04/30/09  
 received: 5/2/17 Opened: 5/2/17 By: CJ Unloaded: 5/2/17 By: CG

Samples were received via? USPS FedEx UPS DHL PDX Courier Hand Delivered

Samples were received in: (circle) Cooler Box Envelope Other NA

Were custody seals on coolers? NA Y N If yes, how many and where? 2 1 Front, 1 Back

If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Outer Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID <u>NA</u>	Tracking Number	NA	Filed
0.3	-0.4	2.1	2.0	-0.1	378		8112 8891 0980		

Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves

Were custody papers properly filled out (ink, signed, etc.)? NA Y N

Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA Y N

If applicable, tissue samples were received: Frozen Partially Thawed Thawed NA Y N

Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N

Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N

Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N

Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below.* NA Y N

Were VOA vials received without headspace? *Indicate in the table below.* NA Y N

Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head- space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions:



## General Chemistry

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dba ALS Environmental

Analytical Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix) **Service Request:** K1704309  
**Project:** Leviathan Mine RI/FS/0013091150 **Date Collected:** 05/1/17  
**Sample Matrix:** Water **Date Received:** 05/2/17  
**Analysis Method:** SM 2540 C **Units:** mg/L  
**Prep Method:** None **Basis:** NA

**Solids, Total Dissolved**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
STWA05011701	K1704309-001	133	5.0	-	1	05/05/17 14:54	
STWA05011702	K1704309-002	403	5.0	-	1	05/05/17 14:54	
STWA05011703	K1704309-003	425	5.0	-	1	05/05/17 14:54	
STWL05011701	K1704309-004	156	5.0	-	1	05/05/17 14:54	
Method Blank	K1704309-MB1	ND U	5.0	-	1	05/05/17 14:54	
Method Blank	K1704309-MB2	ND U	5.0	-	1	05/05/17 14:54	

**ALS Group USA, Corp.**

dba ALS Environmental

## QA/QC Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)**Service Request:** K1704309**Project:** Leviathan Mine RI/FS/0013091150**Date Collected:** NA**Sample Matrix:** Water**Date Received:** NA**Analysis Method:** SM 2540 C**Units:** mg/L**Prep Method:** None**Basis:** NA

**Replicate Sample Summary**  
**Solids, Total Dissolved**

<b>Sample Name:</b>	<b>Lab Code:</b>	<b>MRL</b>	<b>MDL</b>	<b>Sample Result</b>	<b>Duplicate Result</b>	<b>Average</b>	<b>RPD</b>	<b>RPD Limit</b>	<b>Date Analyzed</b>
Batch QC	K1704284-007DUP	5.0	-	713	720	716	<1	10	05/05/17
Batch QC	K1704346-009DUP	5.0	-	662	633	647	5	10	05/05/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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Superset Reference:17-0000421387 rev 00

**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix) **Service Request:** K1704309  
**Project:** Leviathan Mine RI/FS/0013091150 **Date Analyzed:** 05/05/17  
**Sample Matrix:** Water **Date Extracted:** NA

**Lab Control Sample Summary**  
**Solids, Total Dissolved**

**Analysis Method:** SM 2540 C **Units:** mg/L  
**Prep Method:** None **Basis:** NA  
**Analysis Lot:** 544616

<b>Sample Name</b>	<b>Lab Code</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Lab Control Sample	K1704309-LCS	1660	1640	101	85-115

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150  
**Sample Matrix:** Water  
**Analysis Method:** SM 2540 D  
**Prep Method:** None

**Service Request:** K1704309  
**Date Collected:** 05/1/17  
**Date Received:** 05/2/17  
**Units:** mg/L  
**Basis:** NA

**Solids, Total Suspended (TSS)**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
STWA05011701	K1704309-001	<b>10.0</b>	5.0	-	1	05/08/17 14:15	
STWA05011702	K1704309-002	<b>46.0</b>	5.0	-	1	05/08/17 14:15	
STWA05011703	K1704309-003	<b>48.5</b>	5.0	-	1	05/08/17 14:15	
STWL05011701	K1704309-004	<b>68.0</b>	5.0	-	1	05/08/17 14:15	
Method Blank	K1704309-MB1	ND U	5.0	-	1	05/08/17 14:15	
Method Blank	K1704309-MB2	ND U	5.0	-	1	05/08/17 14:15	

**ALS Group USA, Corp.**  
dba **ALS Environmental**

QA/QC Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150  
**Sample Matrix:** Water  
**Analysis Method:** SM 2540 D  
**Prep Method:** None

**Service Request:** K1704309  
**Date Collected:** 05/01/17  
**Date Received:** 05/02/17  
**Units:** mg/L  
**Basis:** NA

**Replicate Sample Summary**  
**Solids, Total Suspended (TSS)**

<b>Sample Name:</b>	<b>Lab Code:</b>	<b>MRL</b>	<b>MDL</b>	<b>Sample Result</b>	<b>Duplicate Result</b>	<b>Average</b>	<b>RPD</b>	<b>RPD Limit</b>	<b>Date Analyzed</b>
STWA05011702	K1704309-002DUP	5.0	-	46.0	50.0	48.0	8	10	05/08/17
Batch QC	K1704362-001DUP	5.0	-	ND U	5.0	NC	NC	10	05/08/17

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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Superset Reference:17-0000421387 rev 00

**ALS Group USA, Corp.**  
dba ALS Environmental

QA/QC Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix) **Service Request:** K1704309  
**Project:** Leviathan Mine RI/FS/0013091150 **Date Analyzed:** 05/08/17  
**Sample Matrix:** Water **Date Extracted:** NA

**Lab Control Sample Summary**  
**Solids, Total Suspended (TSS)**

**Analysis Method:** SM 2540 D **Units:** mg/L  
**Prep Method:** None **Basis:** NA  
 **Analysis Lot:** 544834

<b>Sample Name</b>	<b>Lab Code</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Lab Control Sample	K1704309-LCS	416	429	97	85-115



## Metals

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dba ALS Environmental

Analytical Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150  
**Sample Matrix:** Water  
**Sample Name:** STWA05011701  
**Lab Code:** K1704309-001

**Service Request:** K1704309  
**Date Collected:** 05/01/17 08:00  
**Date Received:** 05/02/17 10:30

**Basis:** NA

**Dissolved Metals**

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	200.7	9 J	ug/L	11	4	1	05/10/17 13:56	05/04/17	
Antimony	200.8	0.044 J	ug/L	0.050	0.020	1	05/16/17 10:14	05/04/17	
Arsenic	200.8	1.44	ug/L	0.50	0.08	1	05/16/17 10:14	05/04/17	
Barium	200.8	33.6	ug/L	0.050	0.020	1	05/16/17 10:14	05/04/17	
Beryllium	200.8	ND U	ug/L	0.020	0.004	1	05/16/17 10:14	05/04/17	
Cadmium	200.8	ND U	ug/L	0.020	0.006	1	05/16/17 10:14	05/04/17	
Chromium	200.8	0.06 J	ug/L	0.20	0.04	1	05/16/17 10:14	05/04/17	
Cobalt	200.8	0.086	ug/L	0.020	0.006	1	05/16/17 10:14	05/04/17	
Copper	200.8	1.31	ug/L	0.10	0.03	1	05/16/17 10:14	05/04/17	
Iron	200.7	17 J	ug/L	21	3	1	05/10/17 13:56	05/04/17	
Lead	200.8	0.009 J	ug/L	0.020	0.002	1	05/16/17 10:14	05/04/17	
Manganese	200.7	3.1	ug/L	1.1	0.07	1	05/10/17 13:56	05/04/17	
Mercury	245.1	ND U	ug/L	0.20	0.02	1	05/04/17 13:29	05/04/17	
Nickel	200.8	0.28	ug/L	0.20	0.04	1	05/16/17 10:14	05/04/17	
Selenium	200.8	0.08 J	ug/L	1.0	0.07	1	05/16/17 10:14	05/04/17	
Silver	200.8	ND U	ug/L	0.020	0.005	1	05/16/17 10:14	05/04/17	
Thallium	200.8	0.010 J	ug/L	0.020	0.006	1	05/16/17 10:14	05/04/17	
Vanadium	200.8	3.17	ug/L	0.20	0.03	1	05/16/17 10:14	05/04/17	
Zinc	200.8	2.7	ug/L	2.0	0.2	1	05/16/17 10:14	05/04/17	

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Analytical Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150  
**Sample Matrix:** Water  
**Sample Name:** STWA05011701  
**Lab Code:** K1704309-001

**Service Request:** K1704309  
**Date Collected:** 05/01/17 08:00  
**Date Received:** 05/02/17 10:30

**Basis:** NA

**Total Metals**

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	200.7	<b>290</b>	ug/L	11	4	1	05/10/17 13:44	05/04/17	
Antimony	200.8	<b>0.059</b>	ug/L	0.050	0.020	1	05/16/17 09:52	05/04/17	
Arsenic	200.8	<b>1.75</b>	ug/L	0.50	0.08	1	05/16/17 09:52	05/04/17	
Barium	200.8	<b>39.4</b>	ug/L	0.050	0.020	1	05/16/17 09:52	05/04/17	
Beryllium	200.8	<b>0.014 J</b>	ug/L	0.020	0.004	1	05/16/17 09:52	05/04/17	
Cadmium	200.8	<b>0.008 J</b>	ug/L	0.020	0.006	1	05/16/17 09:52	05/04/17	
Chromium	200.8	<b>0.15 J</b>	ug/L	0.20	0.04	1	05/16/17 09:52	05/04/17	
Cobalt	200.8	<b>0.128</b>	ug/L	0.020	0.006	1	05/16/17 09:52	05/04/17	
Copper	200.8	<b>1.65</b>	ug/L	0.10	0.03	1	05/16/17 09:52	05/04/17	
Iron	200.7	<b>197</b>	ug/L	21	3	1	05/10/17 13:44	05/04/17	
Lead	200.8	<b>0.082</b>	ug/L	0.020	0.002	1	05/16/17 09:52	05/04/17	
Manganese	200.7	<b>5.9</b>	ug/L	1.1	0.07	1	05/10/17 13:44	05/04/17	
Mercury	245.1	ND U	ug/L	0.20	0.02	1	05/04/17 13:30	05/04/17	
Nickel	200.8	<b>0.31</b>	ug/L	0.20	0.04	1	05/16/17 09:52	05/04/17	
Selenium	200.8	<b>0.1 J</b>	ug/L	1.0	0.07	1	05/16/17 09:52	05/04/17	
Silver	200.8	ND U	ug/L	0.020	0.005	1	05/16/17 09:52	05/04/17	
Thallium	200.8	<b>0.016 J</b>	ug/L	0.020	0.006	1	05/16/17 09:52	05/04/17	
Vanadium	200.8	<b>3.88</b>	ug/L	0.20	0.03	1	05/16/17 09:52	05/04/17	
Zinc	200.8	<b>3.2</b>	ug/L	2.0	0.2	1	05/16/17 09:52	05/04/17	

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Analytical Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150  
**Sample Matrix:** Water  
**Sample Name:** STWA05011702  
**Lab Code:** K1704309-002

**Service Request:** K1704309  
**Date Collected:** 05/01/17 08:02  
**Date Received:** 05/02/17 10:30

**Basis:** NA

**Dissolved Metals**

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	200.7	<b>98</b>	ug/L	11	4	1	05/10/17 13:59	05/04/17	
Antimony	200.8	<b>0.056</b>	ug/L	0.050	0.020	1	05/16/17 10:18	05/04/17	
Arsenic	200.8	<b>0.35 J</b>	ug/L	0.50	0.08	1	05/16/17 10:18	05/04/17	
Barium	200.8	<b>51.0</b>	ug/L	0.050	0.020	1	05/16/17 10:18	05/04/17	
Beryllium	200.8	<b>0.322</b>	ug/L	0.020	0.004	1	05/16/17 10:18	05/04/17	
Cadmium	200.8	<b>0.903</b>	ug/L	0.020	0.006	1	05/16/17 10:18	05/04/17	
Chromium	200.8	<b>0.10 J</b>	ug/L	0.20	0.04	1	05/16/17 10:18	05/04/17	
Cobalt	200.8	<b>27.5</b>	ug/L	0.020	0.006	1	05/16/17 10:18	05/04/17	
Copper	200.8	<b>76.9</b>	ug/L	0.10	0.03	1	05/16/17 10:18	05/04/17	
Iron	200.7	<b>12 J</b>	ug/L	21	3	1	05/10/17 13:59	05/04/17	
Lead	200.8	<b>0.004 J</b>	ug/L	0.020	0.002	1	05/16/17 10:18	05/04/17	
Manganese	200.7	<b>1770</b>	ug/L	1.1	0.07	1	05/10/17 13:59	05/04/17	
Mercury	245.1	ND U	ug/L	0.20	0.02	1	05/04/17 13:32	05/04/17	
Nickel	200.8	<b>70.5</b>	ug/L	0.20	0.04	1	05/16/17 10:18	05/04/17	
Selenium	200.8	<b>16.0</b>	ug/L	1.0	0.07	1	05/16/17 10:18	05/04/17	
Silver	200.8	ND U	ug/L	0.020	0.005	1	05/16/17 10:18	05/04/17	
Thallium	200.8	<b>2.17</b>	ug/L	0.020	0.006	1	05/16/17 10:18	05/04/17	
Vanadium	200.8	<b>0.71</b>	ug/L	0.20	0.03	1	05/16/17 10:18	05/04/17	
Zinc	200.8	<b>93.4</b>	ug/L	2.0	0.2	1	05/16/17 10:18	05/04/17	

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Analytical Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150  
**Sample Matrix:** Water  
**Sample Name:** STWA05011702  
**Lab Code:** K1704309-002

**Service Request:** K1704309  
**Date Collected:** 05/01/17 08:02  
**Date Received:** 05/02/17 10:30

**Basis:** NA

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Aluminum	200.7	<b>5510</b>	ug/L	11	4	1	05/10/17 13:46	05/04/17	
Antimony	200.8	<b>0.118</b>	ug/L	0.050	0.020	1	05/16/17 09:56	05/04/17	
Arsenic	200.8	<b>2.72</b>	ug/L	0.50	0.08	1	05/16/17 09:56	05/04/17	
Barium	200.8	<b>55.1</b>	ug/L	0.050	0.020	1	05/16/17 09:56	05/04/17	
Beryllium	200.8	<b>1.41</b>	ug/L	0.020	0.004	1	05/16/17 09:56	05/04/17	
Cadmium	200.8	<b>0.939</b>	ug/L	0.020	0.006	1	05/16/17 09:56	05/04/17	
Chromium	200.8	<b>0.95</b>	ug/L	0.20	0.04	1	05/16/17 09:56	05/04/17	
Cobalt	200.8	<b>27.9</b>	ug/L	0.020	0.006	1	05/16/17 09:56	05/04/17	
Copper	200.8	<b>223</b>	ug/L	0.10	0.03	1	05/16/17 09:56	05/04/17	
Iron	200.7	<b>803</b>	ug/L	21	3	1	05/10/17 13:46	05/04/17	
Lead	200.8	<b>0.323</b>	ug/L	0.020	0.002	1	05/16/17 09:56	05/04/17	
Manganese	200.7	<b>1760</b>	ug/L	1.1	0.07	1	05/10/17 13:46	05/04/17	
Mercury	245.1	<b>0.11 J</b>	ug/L	0.20	0.02	1	05/04/17 13:33	05/04/17	
Nickel	200.8	<b>71.7</b>	ug/L	0.20	0.04	1	05/16/17 09:56	05/04/17	
Selenium	200.8	<b>16.4</b>	ug/L	1.0	0.07	1	05/16/17 09:56	05/04/17	
Silver	200.8	ND U	ug/L	0.020	0.005	1	05/16/17 09:56	05/04/17	
Thallium	200.8	<b>2.20</b>	ug/L	0.020	0.006	1	05/16/17 09:56	05/04/17	
Vanadium	200.8	<b>2.13</b>	ug/L	0.20	0.03	1	05/16/17 09:56	05/04/17	
Zinc	200.8	<b>100</b>	ug/L	2.0	0.2	1	05/16/17 09:56	05/04/17	

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Analytical Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150  
**Sample Matrix:** Water  
**Sample Name:** STWA05011703  
**Lab Code:** K1704309-003

**Service Request:** K1704309  
**Date Collected:** 05/01/17 08:04  
**Date Received:** 05/02/17 10:30

**Basis:** NA

**Dissolved Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Aluminum	200.7	<b>90</b>	ug/L	11	4	1	05/10/17 14:01	05/04/17	
Antimony	200.8	<b>0.075</b>	ug/L	0.050	0.020	1	05/16/17 10:22	05/04/17	
Arsenic	200.8	<b>0.29 J</b>	ug/L	0.50	0.08	1	05/16/17 10:22	05/04/17	
Barium	200.8	<b>52.4</b>	ug/L	0.050	0.020	1	05/16/17 10:22	05/04/17	
Beryllium	200.8	<b>0.314</b>	ug/L	0.020	0.004	1	05/16/17 10:22	05/04/17	
Cadmium	200.8	<b>0.915</b>	ug/L	0.020	0.006	1	05/16/17 10:22	05/04/17	
Chromium	200.8	<b>0.12 J</b>	ug/L	0.20	0.04	1	05/16/17 10:22	05/04/17	
Cobalt	200.8	<b>28.2</b>	ug/L	0.020	0.006	1	05/16/17 10:22	05/04/17	
Copper	200.8	<b>75.1</b>	ug/L	0.10	0.03	1	05/16/17 10:22	05/04/17	
Iron	200.7	<b>8 J</b>	ug/L	21	3	1	05/10/17 14:01	05/04/17	
Lead	200.8	<b>0.006 J</b>	ug/L	0.020	0.002	1	05/16/17 10:22	05/04/17	
Manganese	200.7	<b>1740</b>	ug/L	1.1	0.07	1	05/10/17 14:01	05/04/17	
Mercury	245.1	<b>ND U</b>	ug/L	0.20	0.02	1	05/04/17 13:35	05/04/17	
Nickel	200.8	<b>71.9</b>	ug/L	0.20	0.04	1	05/16/17 10:22	05/04/17	
Selenium	200.8	<b>16.9</b>	ug/L	1.0	0.07	1	05/16/17 10:22	05/04/17	
Silver	200.8	<b>ND U</b>	ug/L	0.020	0.005	1	05/16/17 10:22	05/04/17	
Thallium	200.8	<b>2.29</b>	ug/L	0.020	0.006	1	05/16/17 10:22	05/04/17	
Vanadium	200.8	<b>0.71</b>	ug/L	0.20	0.03	1	05/16/17 10:22	05/04/17	
Zinc	200.8	<b>96.9</b>	ug/L	2.0	0.2	1	05/16/17 10:22	05/04/17	

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Analytical Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150  
**Sample Matrix:** Water  
**Sample Name:** STWA05011703  
**Lab Code:** K1704309-003

**Service Request:** K1704309  
**Date Collected:** 05/01/17 08:04  
**Date Received:** 05/02/17 10:30

**Basis:** NA

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Aluminum	200.7	<b>5930</b>	ug/L	11	4	1	05/10/17 13:49	05/04/17	
Antimony	200.8	<b>0.111</b>	ug/L	0.050	0.020	1	05/16/17 10:00	05/04/17	
Arsenic	200.8	<b>3.15</b>	ug/L	0.50	0.08	1	05/16/17 10:00	05/04/17	
Barium	200.8	<b>58.0</b>	ug/L	0.050	0.020	1	05/16/17 10:00	05/04/17	
Beryllium	200.8	<b>1.46</b>	ug/L	0.020	0.004	1	05/16/17 10:00	05/04/17	
Cadmium	200.8	<b>0.976</b>	ug/L	0.020	0.006	1	05/16/17 10:00	05/04/17	
Chromium	200.8	<b>0.99</b>	ug/L	0.20	0.04	1	05/16/17 10:00	05/04/17	
Cobalt	200.8	<b>29.1</b>	ug/L	0.020	0.006	1	05/16/17 10:00	05/04/17	
Copper	200.8	<b>239</b>	ug/L	0.10	0.03	1	05/16/17 10:00	05/04/17	
Iron	200.7	<b>912</b>	ug/L	21	3	1	05/10/17 13:49	05/04/17	
Lead	200.8	<b>0.426</b>	ug/L	0.020	0.002	1	05/16/17 10:00	05/04/17	
Manganese	200.7	<b>1790</b>	ug/L	1.1	0.07	1	05/10/17 13:49	05/04/17	
Mercury	245.1	<b>0.12 J</b>	ug/L	0.20	0.02	1	05/04/17 13:37	05/04/17	
Nickel	200.8	<b>74.0</b>	ug/L	0.20	0.04	1	05/16/17 10:00	05/04/17	
Selenium	200.8	<b>16.3</b>	ug/L	1.0	0.07	1	05/16/17 10:00	05/04/17	
Silver	200.8	ND U	ug/L	0.020	0.005	1	05/16/17 10:00	05/04/17	
Thallium	200.8	<b>2.32</b>	ug/L	0.020	0.006	1	05/16/17 10:00	05/04/17	
Vanadium	200.8	<b>2.46</b>	ug/L	0.20	0.03	1	05/16/17 10:00	05/04/17	
Zinc	200.8	<b>105</b>	ug/L	2.0	0.2	1	05/16/17 10:00	05/04/17	

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Analytical Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150  
**Sample Matrix:** Water  
**Sample Name:** STWL05011701  
**Lab Code:** K1704309-004

**Service Request:** K1704309  
**Date Collected:** 05/01/17 08:00  
**Date Received:** 05/02/17 10:30

**Basis:** NA

**Dissolved Metals**

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	200.7	<b>53</b>	ug/L	11	4	1	05/10/17 14:04	05/04/17	
Antimony	200.8	<b>0.044 J</b>	ug/L	0.050	0.020	1	05/16/17 10:27	05/04/17	
Arsenic	200.8	<b>5.71</b>	ug/L	0.50	0.08	1	05/16/17 10:27	05/04/17	
Barium	200.8	<b>49.7</b>	ug/L	0.050	0.020	1	05/16/17 10:27	05/04/17	
Beryllium	200.8	<b>0.018 J</b>	ug/L	0.020	0.004	1	05/16/17 10:27	05/04/17	
Cadmium	200.8	<b>0.292</b>	ug/L	0.020	0.006	1	05/16/17 10:27	05/04/17	
Chromium	200.8	<b>0.10 J</b>	ug/L	0.20	0.04	1	05/16/17 10:27	05/04/17	
Cobalt	200.8	<b>20.9</b>	ug/L	0.020	0.006	1	05/16/17 10:27	05/04/17	
Copper	200.8	<b>4.88</b>	ug/L	0.10	0.03	1	05/16/17 10:27	05/04/17	
Iron	200.7	<b>1810</b>	ug/L	21	3	1	05/10/17 14:04	05/04/17	
Lead	200.8	<b>0.004 J</b>	ug/L	0.020	0.002	1	05/16/17 10:27	05/04/17	
Manganese	200.7	<b>414</b>	ug/L	1.1	0.07	1	05/10/17 14:04	05/04/17	
Mercury	245.1	ND U	ug/L	0.20	0.02	1	05/04/17 13:38	05/04/17	
Nickel	200.8	<b>48.0</b>	ug/L	0.20	0.04	1	05/16/17 10:27	05/04/17	
Selenium	200.8	<b>0.4 J</b>	ug/L	1.0	0.07	1	05/16/17 10:27	05/04/17	
Silver	200.8	ND U	ug/L	0.020	0.005	1	05/16/17 10:27	05/04/17	
Thallium	200.8	<b>0.934</b>	ug/L	0.020	0.006	1	05/16/17 10:27	05/04/17	
Vanadium	200.8	<b>0.26</b>	ug/L	0.20	0.03	1	05/16/17 10:27	05/04/17	
Zinc	200.8	<b>19.8</b>	ug/L	2.0	0.2	1	05/16/17 10:27	05/04/17	

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Analytical Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150  
**Sample Matrix:** Water  
**Sample Name:** STWL05011701  
**Lab Code:** K1704309-004

**Service Request:** K1704309  
**Date Collected:** 05/01/17 08:00  
**Date Received:** 05/02/17 10:30

**Basis:** NA

**Total Metals**

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	200.7	<b>5570</b>	ug/L	11	4	1	05/10/17 13:51	05/04/17	
Antimony	200.8	<b>0.055</b>	ug/L	0.050	0.020	1	05/16/17 10:05	05/04/17	
Arsenic	200.8	<b>19.2</b>	ug/L	0.50	0.08	1	05/16/17 10:05	05/04/17	
Barium	200.8	<b>65.4</b>	ug/L	0.050	0.020	1	05/16/17 10:05	05/04/17	
Beryllium	200.8	<b>0.334</b>	ug/L	0.020	0.004	1	05/16/17 10:05	05/04/17	
Cadmium	200.8	<b>0.403</b>	ug/L	0.020	0.006	1	05/16/17 10:05	05/04/17	
Chromium	200.8	<b>4.82</b>	ug/L	0.20	0.04	1	05/16/17 10:05	05/04/17	
Cobalt	200.8	<b>22.0</b>	ug/L	0.020	0.006	1	05/16/17 10:05	05/04/17	
Copper	200.8	<b>23.8</b>	ug/L	0.10	0.03	1	05/16/17 10:05	05/04/17	
Iron	200.7	<b>8690</b>	ug/L	21	3	1	05/10/17 13:51	05/04/17	
Lead	200.8	<b>0.525</b>	ug/L	0.020	0.002	1	05/16/17 10:05	05/04/17	
Manganese	200.7	<b>440</b>	ug/L	1.1	0.07	1	05/10/17 13:51	05/04/17	
Mercury	245.1	ND U	ug/L	0.20	0.02	1	05/04/17 13:40	05/04/17	
Nickel	200.8	<b>52.2</b>	ug/L	0.20	0.04	1	05/16/17 10:05	05/04/17	
Selenium	200.8	<b>0.5 J</b>	ug/L	1.0	0.07	1	05/16/17 10:05	05/04/17	
Silver	200.8	<b>0.007 J</b>	ug/L	0.020	0.005	1	05/16/17 10:05	05/04/17	
Thallium	200.8	<b>1.11</b>	ug/L	0.020	0.006	1	05/16/17 10:05	05/04/17	
Vanadium	200.8	<b>6.46</b>	ug/L	0.20	0.03	1	05/16/17 10:05	05/04/17	
Zinc	200.8	<b>28.6</b>	ug/L	2.0	0.2	1	05/16/17 10:05	05/04/17	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150  
**Sample Matrix:** Water  
**Sample Name:** STWL05011702  
**Lab Code:** K1704309-005

**Service Request:** K1704309  
**Date Collected:** 05/01/17 13:30  
**Date Received:** 05/02/17 10:30

**Basis:** NA

**Dissolved Metals**

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	200.7	ND U	ug/L	11	4	1	05/10/17 14:13	05/04/17	
Antimony	200.8	ND U	ug/L	0.050	0.020	1	05/16/17 10:40	05/04/17	
Arsenic	200.8	ND U	ug/L	0.50	0.08	1	05/16/17 10:40	05/04/17	
Barium	200.8	<b>0.042 J</b>	ug/L	0.050	0.020	1	05/16/17 10:40	05/04/17	
Beryllium	200.8	ND U	ug/L	0.020	0.004	1	05/16/17 10:40	05/04/17	
Cadmium	200.8	ND U	ug/L	0.020	0.006	1	05/16/17 10:40	05/04/17	
Chromium	200.8	ND U	ug/L	0.20	0.04	1	05/16/17 10:40	05/04/17	
Cobalt	200.8	<b>0.006 J</b>	ug/L	0.020	0.006	1	05/16/17 10:40	05/04/17	
Copper	200.8	<b>0.11</b>	ug/L	0.10	0.03	1	05/16/17 10:40	05/04/17	
Iron	200.7	ND U	ug/L	21	3	1	05/10/17 14:13	05/04/17	
Lead	200.8	ND U	ug/L	0.020	0.002	1	05/16/17 10:40	05/04/17	
Manganese	200.7	<b>0.2 J</b>	ug/L	1.1	0.07	1	05/10/17 14:13	05/04/17	
Mercury	245.1	ND U	ug/L	0.20	0.02	1	05/04/17 13:42	05/04/17	
Nickel	200.8	ND U	ug/L	0.20	0.04	1	05/16/17 10:40	05/04/17	
Selenium	200.8	ND U	ug/L	1.0	0.07	1	05/16/17 10:40	05/04/17	
Silver	200.8	ND U	ug/L	0.020	0.005	1	05/16/17 10:40	05/04/17	
Thallium	200.8	ND U	ug/L	0.020	0.006	1	05/16/17 10:40	05/04/17	
Vanadium	200.8	ND U	ug/L	0.20	0.03	1	05/16/17 10:40	05/04/17	
Zinc	200.8	<b>0.2 J</b>	ug/L	2.0	0.2	1	05/16/17 10:40	05/04/17	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150  
**Sample Matrix:** Water  
**Sample Name:** STWL05011702  
**Lab Code:** K1704309-005

**Service Request:** K1704309  
**Date Collected:** 05/01/17 13:30  
**Date Received:** 05/02/17 10:30

**Basis:** NA

**Total Metals**

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	200.7	<b>5 J</b>	ug/L	11	4	1	05/10/17 13:54	05/04/17	
Antimony	200.8	ND U	ug/L	0.050	0.020	1	05/16/17 10:09	05/04/17	
Arsenic	200.8	ND U	ug/L	0.50	0.08	1	05/16/17 10:09	05/04/17	
Barium	200.8	<b>0.183</b>	ug/L	0.050	0.020	1	05/16/17 10:09	05/04/17	
Beryllium	200.8	ND U	ug/L	0.020	0.004	1	05/16/17 10:09	05/04/17	
Cadmium	200.8	ND U	ug/L	0.020	0.006	1	05/16/17 10:09	05/04/17	
Chromium	200.8	ND U	ug/L	0.20	0.04	1	05/16/17 10:09	05/04/17	
Cobalt	200.8	<b>0.048</b>	ug/L	0.020	0.006	1	05/16/17 10:09	05/04/17	
Copper	200.8	<b>0.21</b>	ug/L	0.10	0.03	1	05/16/17 10:09	05/04/17	
Iron	200.7	<b>9 J</b>	ug/L	21	3	1	05/10/17 13:54	05/04/17	
Lead	200.8	<b>0.003 J</b>	ug/L	0.020	0.002	1	05/16/17 10:09	05/04/17	
Manganese	200.7	<b>0.3 J</b>	ug/L	1.1	0.07	1	05/10/17 13:54	05/04/17	
Mercury	245.1	ND U	ug/L	0.20	0.02	1	05/04/17 13:43	05/04/17	
Nickel	200.8	<b>0.14 J</b>	ug/L	0.20	0.04	1	05/16/17 10:09	05/04/17	
Selenium	200.8	ND U	ug/L	1.0	0.07	1	05/16/17 10:09	05/04/17	
Silver	200.8	ND U	ug/L	0.020	0.005	1	05/16/17 10:09	05/04/17	
Thallium	200.8	ND U	ug/L	0.020	0.006	1	05/16/17 10:09	05/04/17	
Vanadium	200.8	ND U	ug/L	0.20	0.03	1	05/16/17 10:09	05/04/17	
Zinc	200.8	<b>0.4 J</b>	ug/L	2.0	0.2	1	05/16/17 10:09	05/04/17	

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Analytical Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix) **Service Request:** K1704309  
**Project:** Leviathan Mine RI/FS/0013091150 **Date Collected:** NA  
**Sample Matrix:** Water **Date Received:** NA  
  
**Sample Name:** Method Blank **Basis:** NA  
**Lab Code:** KQ1705328-01

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Aluminum	200.7	ND U	ug/L	11	4	1	05/10/17 12:38	05/04/17	
Iron	200.7	ND U	ug/L	21	3	1	05/10/17 12:38	05/04/17	
Manganese	200.7	<b>0.2 J</b>	ug/L	1.1	0.07	1	05/10/17 12:38	05/04/17	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150  
**Sample Matrix:** Water  
**Sample Name:** Method Blank  
**Lab Code:** KQ1705327-01

**Service Request:** K1704309  
**Date Collected:** NA  
**Date Received:** NA

**Basis:** NA

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Antimony	200.8	ND U	ug/L	0.050	0.020	1	05/16/17 07:57	05/04/17	
Arsenic	200.8	ND U	ug/L	0.50	0.08	1	05/16/17 07:57	05/04/17	
Barium	200.8	ND U	ug/L	0.050	0.020	1	05/16/17 07:57	05/04/17	
Beryllium	200.8	ND U	ug/L	0.020	0.004	1	05/16/17 07:57	05/04/17	
Cadmium	200.8	ND U	ug/L	0.020	0.006	1	05/16/17 07:57	05/04/17	
Chromium	200.8	ND U	ug/L	0.20	0.04	1	05/16/17 07:57	05/04/17	
Cobalt	200.8	ND U	ug/L	0.020	0.006	1	05/16/17 07:57	05/04/17	
Copper	200.8	ND U	ug/L	0.10	0.03	1	05/16/17 07:57	05/04/17	
Lead	200.8	ND U	ug/L	0.020	0.002	1	05/16/17 07:57	05/04/17	
Nickel	200.8	ND U	ug/L	0.20	0.04	1	05/16/17 07:57	05/04/17	
Selenium	200.8	ND U	ug/L	1.0	0.07	1	05/16/17 07:57	05/04/17	
Silver	200.8	ND U	ug/L	0.020	0.005	1	05/16/17 07:57	05/04/17	
Thallium	200.8	ND U	ug/L	0.020	0.006	1	05/16/17 07:57	05/04/17	
Vanadium	200.8	ND U	ug/L	0.20	0.03	1	05/16/17 07:57	05/04/17	
Zinc	200.8	ND U	ug/L	2.0	0.2	1	05/16/17 07:57	05/04/17	

**ALS Group USA, Corp.**  
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Analytical Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix) **Service Request:** K1704309  
**Project:** Leviathan Mine RI/FS/0013091150 **Date Collected:** NA  
**Sample Matrix:** Water **Date Received:** NA  
  
**Sample Name:** Method Blank **Basis:** NA  
**Lab Code:** KQ1705329-01

**Total Metals**

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Date Extracted</b>	<b>Q</b>
Mercury	245.1	ND U	ug/L	0.20	0.02	1	05/04/17 12:37	05/04/17	

**ALS Group USA, Corp.**

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## QA/QC Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project** Leviathan Mine RI/FS/0013091150  
**Sample Matrix:** Water

**Service Request:** K1704309  
**Date Collected:** NA  
**Date Received:** NA  
**Date Analyzed:** 05/10/17

**Replicate Sample Summary****Total Metals**

**Sample Name:** Batch QC **Units:** ug/L  
**Lab Code:** K1704253-001 **Basis:** NA

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>MRL</b>	<b>MDL</b>	<b>Sample Result</b>	<b>Duplicate Sample</b>		<b>RPD</b>	<b>RPD Limit</b>
					<b>KQ1705328-06</b>	<b>Result</b>		
Aluminum	200.7	11	4	34100	33800	34000	<1	20
Iron	200.7	21	3	29100	28900	29000	<1	20
Manganese	200.7	1.1	0.07	950	939	944	1	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project** Leviathan Mine RI/FS/0013091150  
**Sample Matrix:** Water

**Service Request:** K1704309  
**Date Collected:** NA  
**Date Received:** NA  
**Date Analyzed:** 05/16/17

**Replicate Sample Summary****Total Metals**

**Sample Name:** Batch QC **Units:** ug/L  
**Lab Code:** K1704253-001 **Basis:** NA

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>MRL</b>	<b>MDL</b>	<b>Sample Result</b>	<b>Duplicate Sample</b>		<b>RPD</b>	<b>RPD Limit</b>
					<b>KQ1705327-06</b>	<b>Result</b>		
Antimony	200.8	0.050	0.020	0.047 J	0.029 J	0.038	49 #	20
Arsenic	200.8	0.50	0.08	197	192	194	3	20
Barium	200.8	0.050	0.020	618	593	606	4	20
Beryllium	200.8	0.020	0.004	26.5	25.3	25.9	5	20
Cadmium	200.8	0.020	0.006	0.010 J	0.008 J	0.009	23 #	20
Chromium	200.8	0.20	0.04	38.2	36.6	37.4	4	20
Cobalt	200.8	0.020	0.006	145	141	143	3	20
Copper	200.8	0.10	0.03	193	187	190	3	20
Lead	200.8	0.020	0.002	29.5	28.6	29.1	3	20
Nickel	200.8	0.20	0.04	195	191	193	2	20
Selenium	200.8	1.0	0.07	9.3	8.9	9.1	4	20
Silver	200.8	0.020	0.005	0.006 J	ND U	NC	NC	20
Thallium	200.8	0.020	0.006	24.7	23.9	24.3	3	20
Vanadium	200.8	0.20	0.03	201	196	198	3	20
Zinc	200.8	2.0	0.2	470	457	464	3	20

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Superset Reference:

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## QA/QC Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project** Leviathan Mine RI/FS/0013091150  
**Sample Matrix:** Water

**Service Request:** K1704309  
**Date Collected:** NA  
**Date Received:** NA  
**Date Analyzed:** 05/04/17

**Replicate Sample Summary****Total Metals**

**Sample Name:** Batch QC **Units:** ug/L  
**Lab Code:** K1704253-001 **Basis:** NA

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>MRL</b>	<b>MDL</b>	<b>Sample Result</b>	<b>Duplicate Sample</b>	<b>KQ1705329-05 Result</b>	<b>Average</b>	<b>RPD</b>	<b>RPD Limit</b>
					<b>KQ1705329-05</b>				
Mercury	245.1	0.40	0.04	6.32		6.66	6.49	5	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

<b>Client:</b>	AMEC Foster Wheeler E & I (Geomatrix)	<b>Service Request:</b>	K1704309
<b>Project:</b>	Leviathan Mine RI/FS/0013091150	<b>Date Collected:</b>	N/A
<b>Sample Matrix:</b>	Water	<b>Date Received:</b>	N/A
		<b>Date Analyzed:</b>	05/10/17
		<b>Date Extracted:</b>	05/4/17

**Duplicate Matrix Spike Summary**  
**Total Metals**

<b>Sample Name:</b>	Batch QC	<b>Units:</b>	ug/L
<b>Lab Code:</b>	K1704253-001	<b>Basis:</b>	NA
<b>Analysis Method:</b>	200.7		
<b>Prep Method:</b>	EPA CLP-METALS ILM04.0		

Analyte Name	Matrix Spike KQ1705328-07					Duplicate Matrix Spike KQ1705328-08				
	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Aluminum	34100	35500	2000	67 #	35400	2000	62 #	70-130	<1	20
Iron	29100	31100	1000	202 #	30100	1000	101 #	70-130	3	20
Manganese	950	1450	500	100	1400	500	89	70-130	4	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

**ALS Group USA, Corp.**  
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QA/QC Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150  
**Sample Matrix:** Water

**Service Request:** K1704309  
**Date Collected:** N/A  
**Date Received:** N/A  
**Date Analyzed:** 05/16/17  
**Date Extracted:** 05/4/17

**Duplicate Matrix Spike Summary**  
**Total Metals**

<b>Sample Name:</b>	Batch QC	<b>Units:</b>	ug/L
<b>Lab Code:</b>	K1704253-001	<b>Basis:</b>	NA
<b>Analysis Method:</b>	200.8		
<b>Prep Method:</b>	EPA CLP-METALS ILM04.0		

<b>Analyte Name</b>	Matrix Spike KQ1705327-07					Duplicate Matrix Spike KQ1705327-08				
	<b>Sample Result</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>	<b>RPD</b>	<b>RPD Limit</b>
Antimony	0.047 J	53.9	50.0	108	54.9	50.0	110	70-130	2	20
Arsenic	197	238	50.0	82	240	50.0	85	70-130	<1	20
Barium	618	682	100	64 #	686	100	68 #	70-130	<1	20
Beryllium	26.5	26.7	2.50	8 #	27.9	2.50	53 #	70-130	4	20
Cadmium	0.010 J	24.8	25.0	99	24.9	25.0	99	70-130	<1	20
Chromium	38.2	45.6	10.0	74	45.4	10.0	73	70-130	<1	20
Cobalt	145	161	25.0	65 #	163	25.0	70 #	70-130	<1	20
Copper	193	195	12.5	21 #	196	12.5	24 #	70-130	<1	20
Lead	29.5	76.7	50.0	94	77.3	50.0	96	70-130	<1	20
Nickel	195	210	25.0	59 #	212	25.0	66 #	70-130	<1	20
Selenium	9.3	58.0	50.0	97	57.9	50.0	97	70-130	<1	20
Silver	0.006 J	11.2	12.5	89	11.4	12.5	91	70-130	2	20
Thallium	24.7	73.2	50.0	97	73.8	50.0	98	70-130	<1	20
Vanadium	201	214	25.0	53 #	216	25.0	59 #	70-130	<1	20
Zinc	470	475	25.0	22 #	477	25.0	29 #	70-130	<1	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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Superset Reference:

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QA/QC Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150  
**Sample Matrix:** Water

**Service Request:** K1704309  
**Date Collected:** N/A  
**Date Received:** N/A  
**Date Analyzed:** 05/4/17  
**Date Extracted:** 05/4/17

**Duplicate Matrix Spike Summary**  
**Total Metals**

**Sample Name:** Batch QC    **Units:** ug/L  
**Lab Code:** K1704253-001    **Basis:** NA

**Analysis Method:** 245.1

**Prep Method:** Method

Analyte Name	Matrix Spike KQ1705329-06					Duplicate Matrix Spike KQ1705329-07				
	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Mercury	6.32	11.4	5.00	102	10.8	5.00	89	70-130	6	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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Superset Reference:

**ALS Group USA, Corp.**  
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QA/QC Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150  
**Sample Matrix:** Water

**Service Request:** K1704309  
**Date Analyzed:** 05/10/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:** ug/L  
**Basis:** NA

**Lab Control Sample**  
KQ1705328-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Aluminum	200.7	5020	5000	100	85-115
Iron	200.7	2560	2500	103	85-115
Manganese	200.7	1250	1250	100	85-115

**ALS Group USA, Corp.**  
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QA/QC Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150  
**Sample Matrix:** Water

**Service Request:** K1704309  
**Date Analyzed:** 05/16/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:** ug/L  
**Basis:** NA

**Lab Control Sample**  
KQ1705327-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Antimony	200.8	54.0	50.0	108	85-115
Arsenic	200.8	50.7	50.0	101	85-115
Barium	200.8	101	100	101	85-115
Beryllium	200.8	2.64	2.50	106	85-115
Cadmium	200.8	25.3	25.0	101	85-115
Chromium	200.8	9.77	10.0	98	85-115
Cobalt	200.8	24.6	25.0	98	85-115
Copper	200.8	12.2	12.5	98	85-115
Lead	200.8	50.3	50.0	101	85-115
Nickel	200.8	24.5	25.0	98	85-115
Selenium	200.8	49.8	50.0	100	85-115
Silver	200.8	11.9	12.5	95	85-115
Thallium	200.8	51.0	50.0	102	85-115
Vanadium	200.8	24.7	25.0	99	85-115
Zinc	200.8	23.5	25.0	94	85-115

**ALS Group USA, Corp.**  
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QA/QC Report

**Client:** AMEC Foster Wheeler E & I (Geomatrix)  
**Project:** Leviathan Mine RI/FS/0013091150  
**Sample Matrix:** Water

**Service Request:** K1704309  
**Date Analyzed:** 05/04/17

**Lab Control Sample Summary**  
**Total Metals**

**Units:** ug/L  
**Basis:** NA

**Lab Control Sample**  
KQ1705329-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Mercury	245.1	4.76	5.00	95	85-115